APR 27 1988 GAO/RCED-88-54

United States General Accounting Office

GAO

Report to Congressional Requesters

COMPLETED
64

April 1988

TONGASS NATIONAL FOREST

Timber Provision of the Alaska Lands Act Needs Clarification

GAO/RCED-88-54

ORIGINAL

GAO

United States
General Accounting Office
Washington, D.C. 20548

Resources, Community, and
Economic Development Division

B-206534

April 11, 1988

The Honorable William Proxmire
United States Senate

The Honorable Ted Stevens
United States Senate

In response to your requests, this report discusses the various issues raised concerning the management of the U.S. Forest Service's timber sales program on the Tongass National Forest pursuant to the Alaska National Interest Lands Conservation Act of 1980 (ANILCA).

This report contains a legislative recommendation to the Congress to revise the timber supply provision of ANILCA to provide the Forest Service with more flexibility in supplying timber under varying market conditions.

As agreed with your offices, unless you publicly announce its contents earlier, we plan no further distribution of this report until 10 days from the date of this letter. At that time we will send copies to the appropriate Senate and House Committees; interested Members of the Congress; the Secretary of Agriculture; the Chief, Forest Service; the Director, Office of Management and Budget; and other interested parties. Copies will be available to others upon request.

This work was performed under the direction of Brian P. Crowley, Senior Associate Director. Other major contributors are listed in appendix X.

J. Dexter Peach

J. Dexter Peach
Assistant Comptroller General

Executive Summary

Purpose

In recent years intense debate has occurred between the timber industry, local governments, and environmental and conservation groups regarding the U.S. Forest Service's management of the Tongass National Forest in southeast Alaska. The Alaska National Interest Lands Conservation Act of 1980 (ANILCA) set aside a portion of the forest as wilderness but sought to guarantee that sufficient timber would be available to sustain a viable timber industry.

Senators William Proxmire and Ted Stevens asked GAO to evaluate the Forest Service's efforts to maintain employment in the Tongass timber industry and to compare the revenues and costs of the Tongass timber sales program. They also asked GAO to review the legal opinions of the U.S. Department of Agriculture (USDA) and industry regarding payment of road-building costs on existing contracts; analyze the expenditures made from the fund; and determine if certain uses were consistent with the law.

Background

The Tongass National Forest covers about 16.8 million acres—the largest national forest in the United States. ANILCA designated about one-third of the Tongass as wilderness, thereby withdrawing about 1.7 million acres of commercial forest land from the timber base. To ensure that sufficient timber would still be available to the timber industry and industry employment would not decline, Section 705(a) of ANILCA required the Forest Service to make available to industry a timber supply of 4.5 billion board feet per decade and created a special annual fund of at least $40 million (the Tongass Timber Supply Fund) to pay for making timber available.

In its 1979 Tongass Land Management Plan (the Plan), the basis for Section 705(a) of ANILCA, the Forest Service said it would fund certain timber harvest activities, such as building access roads in advance of timber sales into economically marginal timber stands, as part of its strategy to meet ANILCA goals.

The state of Alaska and the timber industry have criticized the Forest Service for using the fund to build administrative facilities and roads that do not provide direct access to harvestable timber. The industry has proposed that the Forest Service pay for timber roads of firms with existing contracts. Under existing contracts timber purchasers are generally responsible for road-building.

Results in Brief

Even in the face of declining demand for timber, the Forest Service felt that it was compelled by Section 705(a) and the Plan to continue preparing and offering timber that the market could not absorb. As a result, it has spent millions of dollars preparing timber sales it could not sell. In 1986, the Forest Service's timber sales program on the Tongass Forest incurred a loss of about $22.1 million. According to the Forest Service, timber market conditions have improved in fiscal years 1987 and early 1988.

The timber industry contends that federal assistance should have been greater; that ANILCA requires the Forest Service to ensure the profitability of Tongass timber operations. GAO disagrees with this interpretation of ANILCA; the legislation was not intended to protect industry from market forces.

Neither ANILCA nor its legislative history prohibits the Forest Service from using the Tongass Timber Supply Fund to build administrative roads and facilities as long as such roads and facilities have a substantial connection, even if indirect, with the purpose of the fund.

Federal contract laws prohibit the Forest Service from using the fund to pay the road-building costs of firms that are responsible for such road-building under existing contracts. ANILCA did not provide the Forest Service with the authority to circumvent these laws or to use the fund for roads that companies are contractually obligated to build.

Principal Findings

Projected Employment Levels Not Achieved

Timber industry employment declined from about 2,700 jobs in 1980 to 1,420 jobs in 1986, primarily because of the decreased harvest levels resulting from declining demand for timber and increased production by the Alaska Native corporations that directly compete with the Tongass timber industry.

ANILCA and Forest Service Plan Not Flexible

Neither Section 705(a) nor the Plan anticipated that a timber supply of 4.5 billion board feet per decade would not be needed. Neither provided the Forest Service with the flexibility to deal with reduced demand levels. This inflexibility caused the Forest Service to spend about $131

million from the fund to prepare timber sales not needed to meet current demand.

ANILCA Did Not Guarantee Industry Profitability

Industry contends that the Forest Service must meet ANILCA's timber supply goal with timber that is profitable regardless of market conditions. GAO believes that the statute was designed only to protect the industry from the effects of the wilderness designations. Legislative history does not show that Section 705(a) was intended to protect the industry from a market decline or otherwise guarantee employment. To conclude that the Forest Service must supply only timber that is economically viable would, in effect, make the Forest Service a guarantor that the industry will not bear the risk of timber market fluctuations.

Timber Sale Revenues and Costs

During 1986, the Tongass timber sales program had expenditures of $47.9 million and revenues of $3.3 million, or a net outlay of $44.6 million (the most recent annual data available). The net outlay does not represent a loss, however, because not all the outlays relate to 1986 revenues but are chargeable to future years. Using the cost accounting system concepts developed jointly by GAO and the Forest Service, GAO calculated that the Forest Service incurred costs of about $25.4 million in 1986, resulting in a loss to the Tongass timber sales program of about $22.1 million.

Uses of the Tongass Timber Supply Fund

From 1981 through 1986, the Forest Service spent about $30 million from the fund for administrative roads and facilities. These expenditures are not explicitly prohibited by ANILCA. The fund is available for administrative roads and facilities that have a substantial connection, even if indirect, with the purposes of the fund. The roads and facilities GAO reviewed were appropriately financed by the fund.

The Forest Service cannot, as industry has proposed, use the fund to pay for the road-building costs of firms that are responsible for such road-building under existing contracts. The USDA General Counsel has taken the correct position that the Forest Service is constrained from such action by statutory requirements and the contract law principle of not giving away or surrendering, without compensation, any benefit accruing to the government.

Recommendation to the Congress

To provide the Forest Service with more flexibility for supplying timber under varying market conditions, the Congress should revise the 4.5 billion board-feet-per-decade timber supply provision of Section 705(a) of ANILCA. In making this revision, the timber provision should be revised so that the amount supplied would be based on the anticipated demand for timber and on the data currently being formulated by the Forest Service as part of its land management planning process rather than on a rigid per-decade requirement.

Agency Comments

The Forest Service said that GAO's recommendation has merit and that final legislative action needs to take into account the improved information base and resource demands that the revised plan is identifying.

Contents

Executive Summary		2
Chapter 1 Introduction		10
	Timber Production in the Tongass Forest	10
	The Alaska National Interest Lands Conservation Act	13
	The Tongass Timber Program Since ANILCA	16
	Objectives, Scope, and Methodology	16
Chapter 2 The Tongass Timber Supply Fund		20
	Uses of the Tongass Timber Supply Fund	20
	Controversies Over Fund Uses	22
	Augmentation of Road-Building Costs Under Existing Contracts	26
	Conclusions	29
Chapter 3 Industry Employment, Timber Supply, and Added Investments		30
	Projected Employment Levels Have Not Been Achieved	31
	Section 705(a) Timber Supply Provision Is Inflexible	33
	The Forest Service's Timber Supply Responsibilities	33
	Added Investments Were Not Needed	35
	Forest Service Actions Taken in Response to Reduced Demand	37
	Conclusions	38
	Recommendation to the Congress	39
	Agency Comments	39
Chapter 4 Timber Sale Revenues and Costs at the Tongass National Forest		40
	Tongass Timber Sale Revenues and Costs for 1986	40
	Revenues	41
	Costs	42
	Revenues and Costs at Administrative Areas	43
Appendixes		
	Appendix I: Comments From the Department of Agriculture	46
	Appendix II: Tongass National Forest Appropriations Summary, Fiscal Years 1981-86	47
	Appendix III: Tongass Timber Supply Fund Expenditures, Fiscal Years 1981-86	48

Appendix IV: Facilities Constructed With Tongass Timber Supply Funds, Fiscal Years 1981-86 49
Appendix V: Research Projects Funded by the Tongass Timber Supply Fund, Fiscal Years 1981-86 51
Appendix VI: Methodology Used to Compare Revenues and Costs for the Tongass Timber Sales Program 52
Appendix VII: Comparative Statement of Costs and Revenues Using Different Accounting Methods for Allocating Forest Road Costs, Tongass National Forest, Fiscal Year 1986 56
Appendix VIII: Net Outlays of the Tongass Timber Sales Program, Fiscal Years 1981-85 57
Appendix IX: Relationship of the Tongass Timber Supply Fund's Expenditures and the Timber Sales Program's Costs, Fiscal Year 1986 58
Appendix X: Major Contributors to This Report 62

Tables

Table 1.1: Normal and Added Investment Volumes and Expenditures 15
Table 2.1: Tongass Timber Supply Fund Expenditures, Fiscal Years 1981-86 21
Table 3.1: Estimated Direct Employment Associated With the Tongass National Forest Timber Harvest, 1980-86 31
Table 3.2: Timber Sold Through Added and Normal Investment Strategies, Tongass National Forest, Fiscal Years 1981-86 35
Table 4.1: Statement of Timber Sale Revenues and Costs, Tongass National Forest, Fiscal Year 1986 41
Table 4.2: Statement of Timber Sale Revenues and Costs, Administrative Areas of the Tongass National Forest, Alaska Region, Fiscal Year 1986 44
Table IX.1: Difference Between TTSF Expenditures and Timber Sales Program Costs, Tongass National Forest, Fiscal Year 1986 58
Table IX.2: Calculation of the Sales Activity Allowance, Tongass National Forest, Fiscal Year 1986 59
Table IX.3: Calculation of the Growth Activity Allowance, Tongass National Forest, Fiscal Year 1986 60

Figures

Figure 1.1: The Tongass National Forest 11
Figure 1.2: Timber Harvest in Southeast Alaska, 1980-86 13

Figure 1.3: Distribution of Land in the Tongass National Forest 14
Figure 2.1: Example of a Tie Road Between Timber Sale Areas 23
Figure 2.2: Controversial Facilities Built With the Tongass Timber Supply Fund 24
Figure 3.1: Timber Offered and Sold From the Tongass National Forest, Fiscal Years 1980-86 34
Figure VI.1: Determining Costs to Be Matched Against Revenues 53

Abbreviations

AFMD	Accounting and Financial Management Division
ANILCA	Alaska National Interest Lands Conservation Act of 1980
GAO	General Accounting Office
mmbf	million board feet
RCED	Resources, Community, and Economic Development Division
TTSF	Tongass Timber Supply Fund
USDA	U.S. Department of Agriculture

BLANK PAGE

Introduction

Established in 1907, the Tongass National Forest is the largest national forest in the United States. Located in southeast Alaska, it covers over 16.8 million acres, an area greater than the three states of Massachusetts, New Hampshire, and Connecticut. Under the jurisdiction of the Forest Service, an agency of the U.S. Department of Agriculture (USDA), the Tongass is managed for multiple uses such as timber production, outdoor recreation, and fish and wildlife habitat.

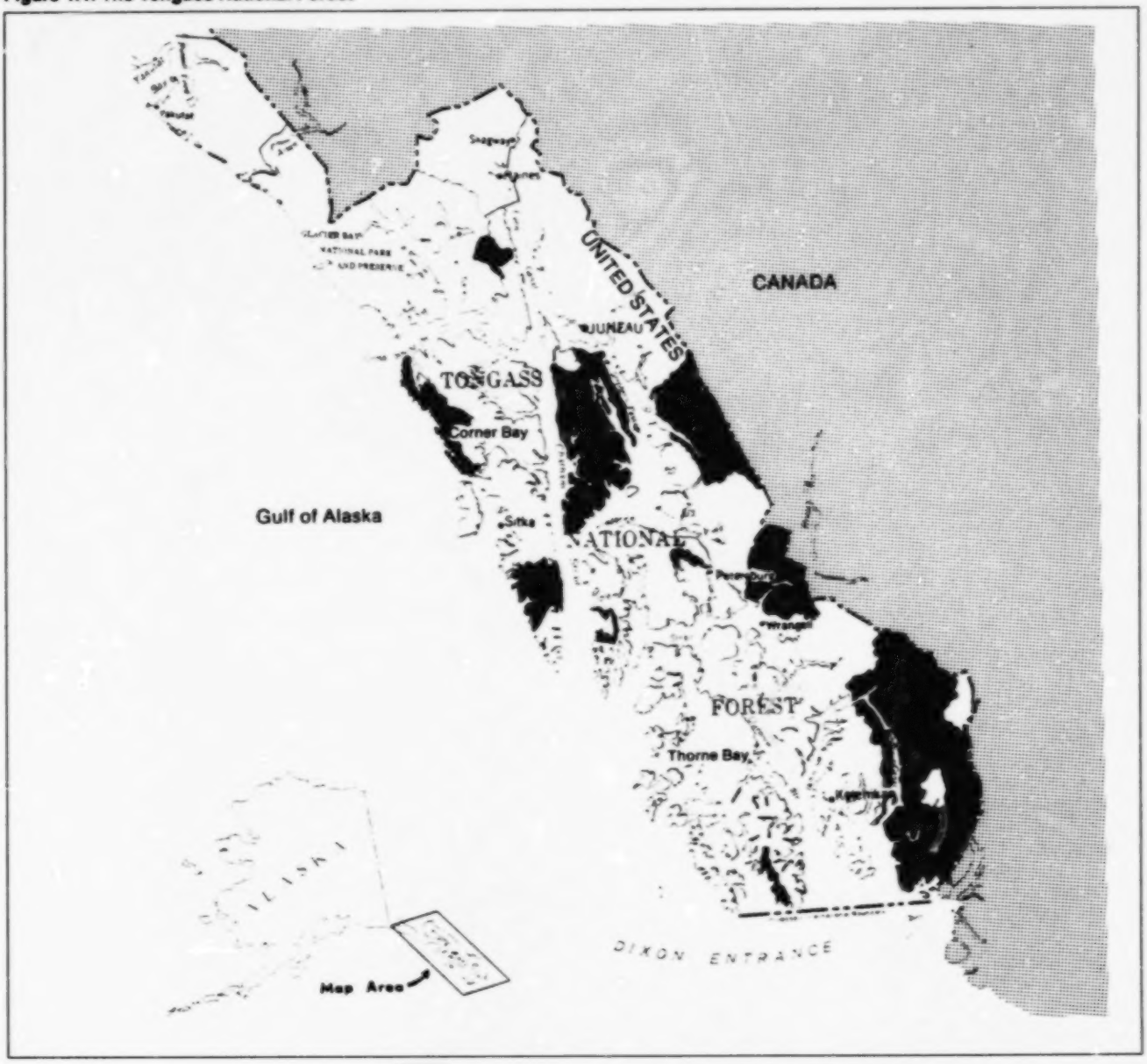
In 1980, the Congress enacted the Alaska National Interest Lands Conservation Act (ANILCA), or the Alaska Lands Act, which designated about 5.5 million acres—approximately one-third of the Tongass—as wilderness. This designation made the land unavailable for timber harvest. To keep the number of timber jobs at the pre-ANILCA level, the Congress authorized a permanent annual appropriation of at least $40 million derived from timber receipts. The Forest Service indicated that it needed this amount to ensure that the same amount of timber could be made available from the remaining forest land. The appropriation, the Tongass Timber Supply Fund (TTSF), is for roads and other expenses associated with making the timber available to industry.

Between 1980 and 1986, however, both the Tongass timber harvest and the number of jobs in the Tongass timber industry have declined sharply. In addition, controversy developed over the Forest Service's implementation of ANILCA and its priorities for spending the annual $40 million appropriation. This review was conducted in response to congressional concern over these matters.

Timber Production in the Tongass Forest

Since the early 1900s, the federal government has promoted the development of a timber industry in southeast Alaska. In the 1950s, the government awarded long-term contracts for timber to several companies. Two of these companies still operate in the Tongass—the Ketchikan Pulp Company, a wholly owned subsidiary of the Louisiana-Pacific Corporation, and the Alaska Pulp Corporation, a Japanese-owned firm. As stipulated in their contracts, each company built a pulp mill, Ketchikan Pulp, near Ketchikan, and Alaska Pulp in Sitka. In return, the government guaranteed them a total of about 13.3 billion board feet of timber harvestable over 50 years.

Figure 1.1: The Tongass National Forest



Wilderness areas established by ANILCA (5.5 million acres).

Source: Developed by GAO from Forest Service maps

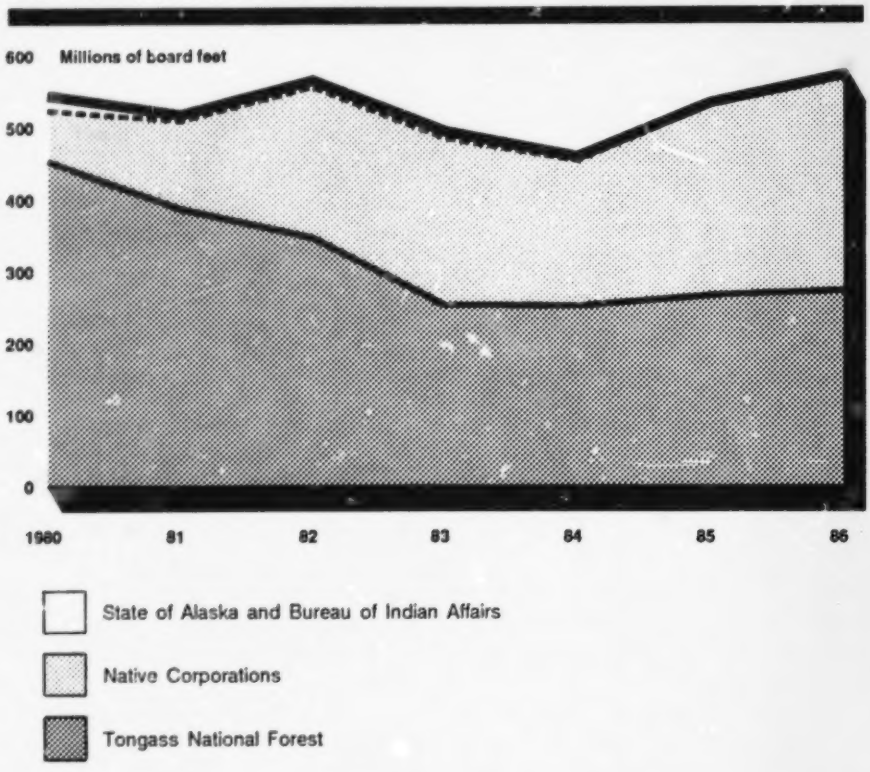
BEST COPY AVAILABLE

In September 1987, 20 other firms held contracts with the Forest Service to harvest timber in the Tongass Forest. These firms are referred to as independents or short-term contractors. Since 1980, about one-third of all Tongass timber sales have been made to short-term contractors.

Most Alaskan timber is exported, primarily to Japan, and to a lesser extent, to Taiwan, South Korea, the People's Republic of China, Thailand, India, Indonesia, Egypt, Belgium, West Germany, Austria, Poland, Bulgaria, the U.S.S.R., Argentina, and Canada. Because federal regulations do not allow timber cut from federal land in Alaska to be exported as round (unsawn) logs, most Tongass timber is processed either into cants (rough sawn timbers cut on at least two sides) or into dissolving pulp. The importing countries further process the cants into finished lumber and the pulp into such products as rayon and cellophane. One pulp mill reported that about 25 percent of its pulp is sold within the United States.

In southeast Alaska, the primary competitors to those who harvest timber from the Tongass are the Alaska Native corporations, which harvest timber from their own lands. As private landowners, the Native corporations can export round logs. As figure 1.2 shows, the Native corporation timber harvest has grown steadily in recent years. In 1980, the Native harvest was 70.3 million board feet; by 1986, it had risen to 298.7 million board feet. By comparison, timber harvested from the Tongass declined from 452.1 million board feet in 1980 to 271.6 million board feet in 1986.

Figure 1.2: Timber Harvest in Southeast Alaska, 1980-86



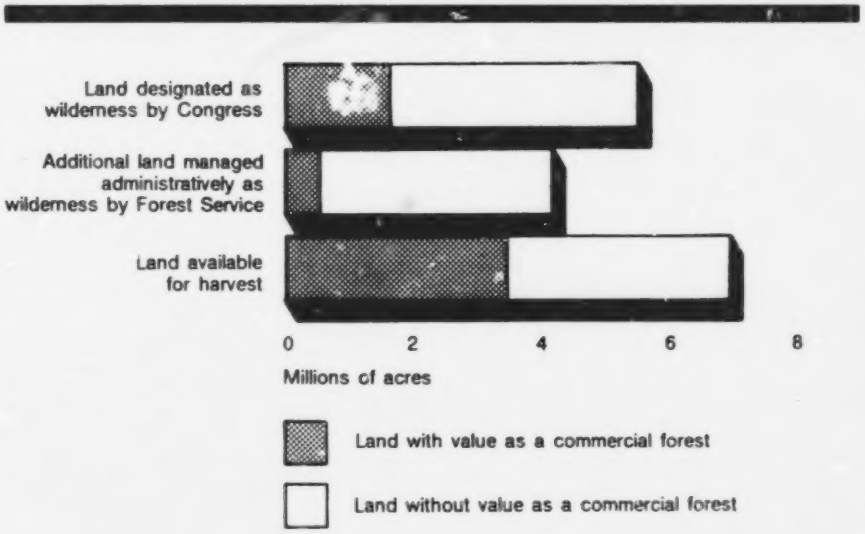
The Alaska National Interest Lands Conservation Act

As figure 1.3 shows, the 5.5 million acres designated as wilderness under ANILCA included about 1.7 million acres of commercial forest land. The Forest Service also designated about 4.2 million acres of the Tongass as roadless or back-country areas, thereby removing another 650,000 acres of commercial forest land. Of the remaining 7.0 million acres not set aside by ANILCA or the Forest Service, about 3.5 million acres were classified as commercial forest land. Of these, the Forest Service classified about 2.8 million acres as economically viable timber and about 650,000 acres as economically marginal timber.[1]

[1]According to the Forest Service, at the time ANILCA was passed, economically viable timber was generally defined as timber stands with volumes of over 20,000 board feet per acre and harvestable with commonly used logging techniques. Economically marginal timber was defined as timber stands with 20,000 or less board feet per acre or timber stands with higher volumes that could not be economically harvested because of constraints imposed to protect other resources, such as wildlife, or that required advanced logging techniques, such as helicopters or balloons, to harvest.

BEST COPY AVAILABLE

Figure 1.3: Distribution of Land in the Tongass National Forest



To offset the effects of the ANILCA wilderness designations on the two purchasers with long-term contracts and other companies dependent on the Tongass Forest, the Congress specified in Section 705(a) of ANILCA that

"The Secretary of the Treasury shall make available to the Secretary of Agriculture the sum of at least $40,000,000 annually or as much as the Secretary of Agriculture finds is necessary to maintain the timber supply from the Tongass National Forest to dependent industry at a rate of four billion five hundred million board foot measure per decade."

The Congress further provided that this annual sum would not be subject to deferral or rescission by the Administration, or to the annual appropriation process. The legislative history of this provision shows that its goal was to maintain the Tongass timber industry employment at pre-ANILCA levels.

Section 705(a)—and the annual $40 million appropriation—was based on the Forest Service's 1979 Tongass Land Management Plan. In this plan the Forest Service stated that maintaining timber industry employment at pre-ANILCA levels meant making an average of 450 million board feet of timber available to the industry each year. To sustain this level

BEST COPY AVAILABLE

of supply, the Forest Service said it would have to adopt an "added investment strategy." Such a strategy involved the Forest Service's spending money on three items:

- pre-roading: building access roads in advance of timber sales into economically marginal timber stands;
- pre-commercial thinning: thinning young stands of timber (usually 10 to 15 years old) to improve the spacing and species composition, increase growth, and shorten the time between harvests, thus allowing a higher rate of timber harvest; and
- advanced logging technology: conducting research into new techniques such as using helicopters and balloons to move logs from steep slopes or other hard-to-access areas.

Table 1.1 shows the Forest Service's determinations of annual timber volumes and associated expenditures needed to meet the 450 million board feet (mmbf) annual timber harvest goal. As the table shows, the Forest Service projected it would need about $14.8 million annually to finance its "normal" investment activities—timber sale preparation activities for timber stands that could be economically harvested with commonly available logging techniques and equipment. The Forest Service estimated this investment would produce about 338 million board feet in annual timber sales. To produce the additional 112 million board feet needed to achieve the 450 million board feet goal, the Forest Service estimated an added investment of about $20.4 million annually would be needed. In total, the Forest Service estimated it would need about $35.2 million annually in 1978 dollars, or $40 million in 1980 dollars, to finance its timber sale activities in the Tongass.

Table 1.1: Normal and Added Investment Volumes and Expenditures

In 1978 dollars

Category	Volume (mmbf)	Expenditures (millions)
Normal investment	338	$14.8
Total normal investment	**338**	**$14.8**
Added investment		
Preroading	60	14.6
Pre-commercial thinning	34	3.0
Advanced logging technology	18	2.8
Total added investments	**112**	**$20.4**
Total normal and added investments	**450**	**$35.2**

Source: U.S. Forest Service, Tongass Land Management Plan, Amended 1985-86.

The Tongass Timber Program Since ANILCA

In the 6 years following the passage of ANILCA, the Forest Service spent about $257 million to maintain industry employment. However, Tongass timber industry employment levels have declined by nearly 50 percent since 1980. According to the Forest Service, such factors as a drop in demand combined with increased timber production from Native corporations caused a substantial decline in the Tongass timber industry. In 1986, only 12 of the 31 sawmills that were operating using Tongass timber in 1983 were still operating. In 1986, the remaining 12 sawmills were operating at 55 percent of capacity, and the two pulpmills were operating at 75 percent of capacity.

This situation has contributed to controversies over the Forest Service's implementation of Section 705(a) and priorities for spending the $40 million Tongass Timber Supply Fund. These controversies, discussed in detail later in this report, have been the subject of much debate and have been discussed at congressional hearings. A bill was introduced in 1986, and two bills were introduced in 1987, to repeal Section 705(a) of ANILCA. As of the date of this report, the proposed legislation was still pending.

According to the Forest Service, the harvest levels, bid prices, and revenues attributed to the Tongass timber program showed significant increases during fiscal year 1987. The Forest Service's projection for fiscal year 1988 indicates that market conditions will continue to improve over 1987. The first quarter of 1988 has shown a harvest level above the 1987 level, and the industry is gearing up to increase the harvest during the remaining three quarters. According to the Forest Service, the improvement in timber harvest levels in 1987 can be attributed to increased markets in the Pacific Rim countries and the more favorable exchange rate between the dollar and yen, which provides more attractive foreign market opportunities.

Objectives, Scope, and Methodology

Our review of the Tongass was conducted in response to requests by Senator Ted Stevens and Senator William Proxmire in July 1986. In accordance with these requests and with further discussions with the Senators' offices, we agreed to

- analyze the expenditures made by the Forest Service from the Tongass Timber Supply Fund and determine how these expenditures relate to the timber management program and the general Forest Service management of the Tongass;

- review the legal opinions of the USDA and the Alaska timber industry dealing with the use of the Tongass Timber Supply Fund to augment the industry's road-building costs on existing timber sales;
- evaluate how well the Section 705(a) timber supply and funding provisions are fulfilling the congressional objective of maintaining timber industry employment in southeast Alaska;
- analyze the economic basis of the policies in the Forest Service's 1979 Tongass Land Management Plan calling for added investments in pre-roading, pre-commercial thinning, and advanced logging techniques as ways to produce commercially viable timber from economically marginal stands; and
- compare the government's costs for growing and selling timber at the Tongass with the revenues generated from timber sales.

To analyze the Forest Service's expenditures from the Tongass Timber Supply Fund, we reviewed Section 705(a) of ANILCA and its legislative history to determine congressional intent regarding the use of the fund. We also reviewed various Forest Service regulations and guidelines, and a legal opinion issued by the USDA's General Counsel to determine how the agency had interpreted congressional intent.

To determine the nature of the Forest Service's expenditures from the fund, we reviewed the financial and accounting records, administrative facility and road construction contract files, and other documentation at the Alaska Regional Office in Juneau and at the area offices in Ketchikan, Sitka, and Petersburg. At these locations, we interviewed Forest Service budget officers, fiscal and accounting staff, timber management officers, facilities and other engineers, and other officials.

We made field trips to the District Ranger Station at Thorne Bay and to Forest Service work centers at Corner Bay and Portage Bay to gain a better perspective as to why these facilities have been controversial and to determine whether they were built and used for the purpose of meeting the timber supply goals of ANILCA.

To determine whether the Forest Service has the legal authority to use the Tongass Timber Supply Fund to augment the road-building costs of firms with existing contracts, we reviewed the legal opinions of the USDA and the Alaska timber industry on this matter. We also reviewed Section 705(a) and its legislative history, other existing contract laws, and previous Comptroller General opinions.

To determine how well the congressional objective of maintaining industry employment was being fulfilled, we obtained and analyzed employment data from the Forest Service, U.S. Department of Labor, and Alaska State Department of Labor. We also conducted an economic analysis to determine whether the Forest Service has the ability to maintain industry employment by maintaining the supply of timber to industry.

To analyze the economic basis of the Forest Service's added investment strategy for providing industry with commercially viable timber from marginal timber stands, we reviewed the basis for this strategy—the 1979 Tongass Land Management Plan, subsequent amendments to this plan, and other Alaska Region reports and documentation on this subject. We obtained and analyzed Forest Service records on timber harvest levels and costs and compared these with projections made in the land management plan for 1980-86. We did not examine nor project the economic effects of changing market conditions in the "out years." We interviewed regional and area office officials such as engineers, budget officers, economists, accountants, and timber management managers and specialists.

To determine how the Forest Service's expenditures from the Tongass Timber Supply Fund compare with the related timber sale revenues, we applied a timber sale accounting system recently developed jointly by the Forest Service and GAO.[2] We performed this work at the Forest Service's three area offices in the Tongass. A more detailed explanation of our methodology is contained in appendix VI.

To identify and obtain information on the timber industry's concerns about the Forest Service's timber sales program for the Tongass, we interviewed and obtained documentation from officials of the two long-term contract companies, two independent timber companies, and an Alaska timber industry trade association. We also visited logging camps, sawmills, and the two pulp mills in southeast Alaska. To obtain other perspectives, we interviewed and obtained documentation from an official of an Alaska Native regional corporation and from officials of two environmental groups.

We obtained information from and discussed our work with officials from the state of Alaska, including representatives from the Division of

[2]Timber Program: A Cost Accounting System Design for Timber Sales in National Forests (GAO/AFMD-87-33, April 1987).

Management and Budget, Government Coordination Division; Department of Natural Resources, Forestry Division; Department of Commerce and Economic Development, Mineral and Forest Products Division; Department of Environmental Conservation, Environmental Quality Division; and Department of Fish and Game, Habitat Division. We also interviewed and obtained information from a labor economist from the Alaska State Department of Labor.

Our field work was performed from October 1986 through August 1987. It was conducted in accordance with generally accepted government auditing standards.

Chapter 2

The Tongass Timber Supply Fund

The Congress established the Tongass Timber Supply Fund to finance the Forest Service's activities for supplying the Tongass timber industry with 4.5 billion board feet of timber per decade. From fiscal year 1981, the fund's first year, through fiscal year 1986, the Forest Service spent approximately $257 million. Some of these expenditures have generated considerable criticism and controversy. The Tongass timber industry and the state of Alaska have criticized the Forest Service for using the fund for such things as administrative roads and facilities. After reviewing the expenditures and the relevant statutes, however, we believe the Forest Service was operating within the law when it used the fund for these purposes.

The Forest Service has also been criticized by the industry for not using the fund to augment, or subsidize, the road-building costs of firms with existing contracts. We found that the Forest Service's position, i.e., it cannot use the fund to finance the costs of roads that the purchasers are contractually obligated to build, is consistent with the law and the legislative history.

Uses of the Tongass Timber Supply Fund

The Forest Service has used the fund, a permanent appropriation, for activities such as timber sales preparation and administration, timber stand improvement, road and facility construction, and research. Prior to ANILCA, these activities were financed with various other appropriations in a manner similar to the other national forests.[1]

Table 2.1 summarizes the data we obtained from the Forest Service on the fund expenditures from fiscal year 1981 through fiscal year 1986, the last year for which complete information was available. Appendix III provides a more detailed breakdown of fund expenditures.

[1]The Tongass National Forest still receives other appropriated funds, in addition to the funds provided under Section 705(a) of ANILCA, for both timber and non-timber-related activities. See appendix II for details of these appropriations.

Table 2.1: Tongass Timber Supply Fund Expenditures, Fiscal Years 1981-86

(Dollars in millions)

	1981	1982	1983	1984	1985	1986	Total
Timber sales preparation & administration	$10.0	$12.3	$15.0	$15.8	$15.9	$15.0	**$84.0**
Reforestation/timber stand improvement	2.2	4.0	4.3	3.8	2.9	3.9	**21.1**
Facilities construction	1.9	7.3	2.4	3.8	2.5	1.7	**19.6**
Road construction/ reconstruction	8.9	20.9	21.7	23.0	23.1	25.3	**122.9**
Research	0.2	1.4	1.7	1.7	2.0	2.0	**9.0**
Total	**$23.2**	**$45.9**	**$45.1**	**$48.1**	**$46.4**	**$47.9**	**$256.6**

Source: Forest Service, Region 10

The five major categories of expenditures were as follows:

- Timber sales preparation and administration. From 1981 through 1986, the Forest Service spent about $84 million to prepare and administer timber sales. These activities involve identifying and preparing sale areas and overseeing the timber sale contracts as the timber is being harvested. It also includes expenses for such timber support functions as fish and wildlife habitat protection and soil erosion control.
- Reforestation and timber stand improvement. From 1981 through 1986, the Forest Service spent about $21 million to reforest harvested areas and improve timber stands through activities such as pre-commercial thinning.
- Facilities construction. From 1981 through 1986, the Forest Service spent about $19.6 million to build and repair administrative facilities. Included in these construction costs are about $8.4 million for site preparation, housing, warehouses, marine facilities, and utilities for ranger districts; about $1.3 million for three floating field camps; about $2.9 million for five field work centers; about $511,000 for other housing, storage buildings, and marine facilities; about $397,000 for facility repairs; about $1 million for architect and engineering contract services; about $3 million for engineering support (facilities construction supervision and contract administration); about $1.2 million for regional office overhead; and about $859,000 in other costs. See appendix IV for more details on facilities.
- Road Construction and Reconstruction. From 1981 through 1986, the Forest Service spent about $123 million of the fund for the construction and reconstruction of roads and related facilities. These expenditures include $59 million in contracts for 303 miles of roads, 21 bridges, and 13 log transfer facilities (used to transfer logs from land to water). The

Forest Service spent the remaining $64 million for engineering support—that is, the planning, design, construction oversight, and contract administration of all roads and related facilities, including those built by both government contracts and timber purchasers.

- Research. From 1981 through 1986, the Forest Service's Pacific Northwest Research Station spent about $9 million of the fund on research. These expenditures were for 13 Tongass timber-related research projects. For example, one project, costing $857,000 through fiscal year 1986, was for developing ways to minimize the effects of timber production on soil nutrients, slope stability, and stream hydrology. Another project, costing $931,000 through fiscal year 1986, was for finding ways to minimize the adverse effects of forest management activities on salmon habitat. See appendix V for more details on research projects financed by the fund.

Controversies Over Fund Uses

The state of Alaska and the timber industry have criticized the Forest Service for using the fund to build administrative roads and facilities. They contend that these roads and facilities should have been financed with other Forest Service appropriations because they are not used to directly support achieving the supply goal of 4.5 billion board feet per decade.

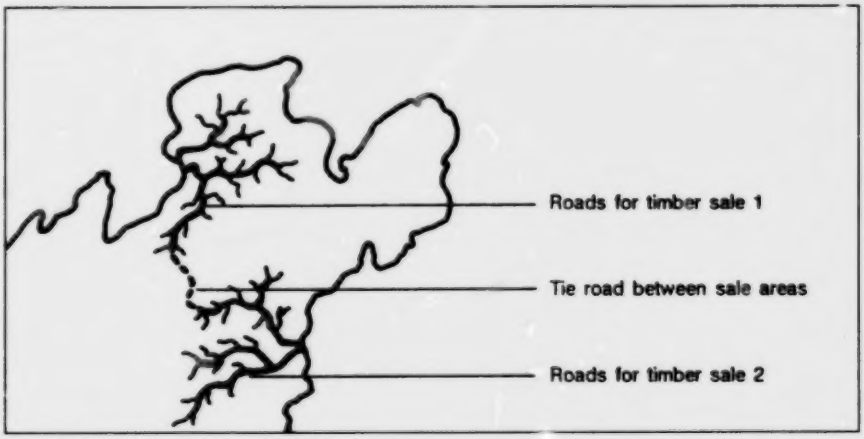
Administrative Tie Roads

From 1981 through 1986, the Forest Service let contracts for about $10 million to build four administrative tie roads totaling about 43 miles. As figure 2.1 shows, tie roads connect existing roads but do not provide direct access to harvestable timber.

Two of the roads receiving criticism are the El Cap-Red Bay tie road and the Polk 12-mile tie road, both located on Prince of Wales Island near Ketchikan. Completed in 1983 at a cost of about $3.1 million, the El Cap-Red Bay tie road consists of a total of 18 miles of reconstructed and newly constructed roadway. Forest Service officials said that this road was built primarily to enable its personnel to drive rather than fly between work locations and administrative facilities. They said that industry has also used the road for hauling logs and for access to several timber harvest sites from one logging camp. Before the road was built, they said, the timber operators had to use three logging camps.

Completed in 1986 at a cost of about $2.7 million, the Polk 12-mile road connects the Craig Ranger District with a timber harvest area. A long-term contractor objected to the road because about 9 miles of it run

Figure 2.1: Example of a Tie Road Between Timber Sale Areas



through a previously harvested area and did not aid in the maintenance of the timber supply. Forest Service officials said that it is needed to administer future timber harvests in the long-term sale area.

Administrative Facilities

Administrative facilities causing controversy are a ranger district office and housing complex at Thorne Bay and work centers at Corner Bay and Portage Bay. Forest Service field staff use these facilities when preparing and administering timber sales.

Thorne Bay Ranger District Complex

Although the Thorne Bay ranger district complex, located on Prince of Wales Island, was planned prior to ANILCA, construction did not start until 1981. It was completed in 1986 at cost of about $6.4 million, of which about $5.7 was from the Tongass Fund.[2] Buildings for this complex include a ranger district office building, a warehouse, a storage building and pump house, five duplex family units, three 4-plex housing units, and a bunkhouse. (See figure 2.2.) The Forest Service uses this facility primarily for administering its timber sale contracts. According to Forest Service officials, this complex has been fully utilized since construction was completed.

[2]The remaining $700,000 was funded by the Fire, Administrative, and Other General Purpose Construction appropriation.

Figure 2.2: Controversial Facilities Built With the Tongass Timber Supply Fund

Part of the housing complex for Forest Service personnel at Thorne Bay

Work center at Portage Bay, containing housing for Forest Service field crews

Corner Bay Work Center

The Corner Bay work center is located on Chichagof Island, about halfway between Juneau and Sitka. Completed in 1984 at a cost of about

BEST COPY AVAILABLE

$940,000, this facility consists of a crew quarters building with attached warehouse and garage. Forest Service officials told us the crew quarters can accommodate up to 24 employees. But the officials said the use of this facility has been limited because an environmental group and residents of a nearby community obtained an injunction halting all road construction and thereby all logging activity near the work center. The Forest Service officials said that future use of this facility will depend on the outcome of the pending lawsuit.

Portage Bay Work Center

Located on Kupreanof Island, northwest of Petersburg, this facility was completed in 1984 at a cost of about $712,000. (See figure 2.2.) The buildings for this facility are nearly identical to those at Corner Bay. Forest Service officials told us that the facility has been used only intermittently by 4- and 5-person Forest Service crews because the downturn in the timber market has sharply curtailed logging activity in the vicinity. Future utilization, an official said, will depend on very strong market conditions and the availability of Tongass timber supply funds for pre-roading.

Appropriateness of Fund Usage

Forest Service officials told us that these administrative roads and facilities were built to improve employee safety, morale, and job efficiency by decreasing aircraft flights and to reduce employee turnover by decreasing family separations. Between 1974 and 1980, Region 10 experienced 15 aircraft-related deaths because Forest Service field staffs lived either in Juneau, Sitka, Ketchikan, or Petersburg and had to be flown to work locations. After the last accident, which killed seven Forest Service personnel in 1978, Forest Service headquarters directed Region 10 to plan its building program so that employees would be located closer to their work sites. Forest Service officials said that the Polk 12-Mile and the El Cap-Red Bay tie roads also benefitted the timber industry because the roads are used to haul logs.

In 1981, the USDA's Office of General Counsel addressed questions pertaining to uses of the fund. It said that

> ". . . the Secretary has considerable flexibility in choosing programs for which to request section 705(a) funds. A reasonable interpretation of congressional intent would place all activities normally recognized as timber management programs eligible for special funding. If the Secretary can justify that a program not directly related to timber production is nevertheless necessary to fund if the desired harvest

level is to be sustained without violating other legal constraints, our opinion is that a request for section 705(a) funds for that activity is defensible."

In our review of the legislative history of Section 705(a), we found little direction on how the fund should be used. However, we believe that, in principle, expenditures for administrative roads and facilities are justified if they can be shown to have a substantial connection, even if indirect, with the purpose of the fund—that is, with ensuring a timber supply of 4.5 billion board feet per decade to industry. Availability of the fund for a particular road or facility can only be decided on a case-by-case basis.

As with any expenditure of appropriated funds, the general rule is that the funds may be applied "only to the objects for which the appropriations were made except as otherwise provided by law" (31 U.S.C., 1301(a)). Within that general rule, however, agencies have reasonable discretion in determining how to carry out the objectives of the appropriation. Further, appropriations are available for expenses, beyond those named in the statute, that are "necessary or proper or incident to" carrying out the purpose of the appropriation (6 Comp. Gen. 619, 621 (1927)). Each expenditure must therefore be looked at individually to determine whether it is appropriate within these rules. Because the Forest Service expenditures for the administrative roads and facilities we looked at appeared to be used for the Tongass timber sale program, we believe that the Forest Service's use of the fund in these cases was consistent with the law.

Augmentation of Road-Building Costs Under Existing Contracts

As agreed with the requesters' offices, we reviewed the legal opinions of industry and USDA regarding industry's proposal that the Forest Service use the Tongass Fund to "augment" (help pay for) the cost of building roads that firms with existing contracts—primarily the two long-term contracts— are obligated to build. The USDA's Office of General Counsel has ruled that the Department cannot use the fund in this way because (1) to do so would violate the principle that a federal agency may not surrender a contractual right without getting something in return and (2) the proposed procedure would interfere with the required competitive bidding process. The Department believes that ANILCA does not permit the Forest Service to override these requirements; however, it does permit the Forest Service to assist the timber companies in other ways. For example, the Department can use the fund to construct roads to access timber that the purchaser would not otherwise harvest. We agree

with the Department's position, which we found to be more persuasive and to be inadequately rebutted by the industry.

The Forest Service's long-term timber contracts with the two pulp companies require the companies to construct and maintain the roads and bridges needed for harvesting timber. Rates to be paid by the timber companies for harvested timber are redetermined during the 50-year contracts at 5-year intervals, based on the appraised value. When the long-term contract holders originally entered into these contracts, the terms reflected their expectation that they would have to construct and maintain the roads needed to harvest the timber. When roads are built as part of a timber sale contract, the timber purchaser receives credits, called purchaser credits, that can be used to pay for the timber purchased. However, since the passage of ANILCA, a decline in market demand for Tongass timber products has caused the appraised value for timber to fall so low that the timber value sometimes does not cover the road-building costs. This has led to the industry's complaint that the Forest Service is not meeting its ANILCA obligation because it has forced industry to build roads free of charge to the government when markets are bad.

The timber industry has asked the Forest Service to use the Tongass Timber Supply Fund to augment road-building costs. Industry contends that the employment goals of Section 705(a) would be better served if the Forest Service were to utilize the fund to augment road construction costs, through direct payments to contract holders, thus improving the immediate profitability of timber operations.

USDA has taken the position that it is constrained from such action by statutory requirements to advertise for road construction. It holds that any road-building contracts awarded by the Forest Service must, by law, be competitively awarded. To contribute funds to an operator for road-building without competitive bidding would sidestep this requirement. USDA believes that Section 705(a) does not grant the Forest Service authority to circumvent these constraints. In USDA's view, Section 705(a) is not sufficiently explicit to permit it to ignore existing requirements of competitive bidding laws.

We agree with the USDA's position. Section 5 of Title 41, United States Code, requires advertising prior to letting federal contracts. None of the exceptions to the requirement for advertising appear to apply to the proposed use of the Tongass Timber Supply Fund. From our reading of

the statutes, therefore, we conclude that statutory advertising requirements for road construction must be met when using Section 705(a) funds.

USDA has also concluded that it cannot, as industry has proposed, simply transfer Section 705(a) funds to operators so that they can build roads. It believes that doing so would be inconsistent with the requirement that the government cannot, without statutory authority, waive contractual rights or modify an existing contract to the detriment of the government, without some corresponding benefit to the government. USDA also found that Section 705(a) did not grant the Forest Service an exemption to this requirement.

We agree with USDA's position. It has been our longstanding position that no officer or agent of the government has the authority to waive contractual rights that have accrued to the United States, or to modify existing contracts to the detriment of the government without legal consideration. This rule is premised on the constitutional principle that the power to dispose of government property, including contractual rights, is vested in the Congress. Therefore, in the absence of any specific statutory authority that would allow such a surrender, it is unauthorized. Our review of the law and legislative history found no authority that compels the conclusion that the fund may be used without regard to this rule.

Industry suggested that the use of augmentation funds in existing sales is similar to cases in which a contract was originally put out to bid, and, after the award, was modified to include extra work without any additional competitive bidding. Industry cited the "considerable magnitude" test: additional work may be added to a contract without formal advertising if it is not of "considerable magnitude" (5 Comp. Gen. 508 (1926)). As the Forest Service points out, however, the industry proposal is not a case of the government asking the operator to perform work in addition to that required of it under the contract. Rather, the operator would be doing less than is required of it.

The central issue is whether Section 705(a) overrides the statutory requirement to competitively bid road construction and the principle of the government's receiving consideration when it gives up or surrenders a benefit that has accrued to it. We believe that it does not clearly do so.

Finally, the two long-term contracts have a provision that permits emergency rate redeterminations on petition by the companies. That provision has been used to give substantial relief to the companies (see ch. 3). The Congress has recognized, in effect, that without such a provision in the contract, legislation would be needed for the Forest Service to provide relief to holders of existing contracts. This is evidently why it enacted the Federal Timber Contract Payment Modification Act (P.L. No. 98-478, 98 Stat. 2213). The act authorized rate relief for small timber operators in Alaska who had no such provisions in their contracts. The enactment of this law demonstrates that the Congress understood that, without contractual authority, a specific statute was necessary to permit relief to holders of existing contracts. If the Forest Service were to absorb the cost of roads for which companies are responsible, the Service would, in effect, lower the rate that the companies are obligated under the contracts to pay. Without specific authorization, it does not appear that the Forest Service can do so.

In our view, the industry's arguments fail to overcome the legal barriers to its proposed course of action. The industry is correct that the fund is to be used for the benefit of dependent industry, but the Forest Service has broad discretion how to achieve that goal and is not required to select a method which is of questionable legality.

Conclusions

Neither Section 705(a) nor its legislative history explicitly prohibits the use of the Tongass Timber Supply Fund for administrative roads and facilities. Therefore, the Forest Service may use the fund in these ways as long as the roads and facilities contribute, even if indirectly, to the general purpose of the fund. Because the roads and facilities we looked at appeared to be used to further the goals of the Tongass timber sale program, we believe the Forest Service's use of the fund in these cases was consistent with the law.

We also believe that the USDA's position regarding the augmentation of road-building costs is consistent with the law and legislative history. It does not appear that funds provided under section 705(a) of ANILCA can be contributed directly to holders of existing timber sale contracts in the Tongass for the purpose of reducing costs of road construction for which the holders are contractually obligated.

Industry Employment, Timber Supply, and Added Investments

The employment goal of Section 705(a) of ANILCA and the Tongass Land Management Plan—to maintain employment in the timber industry at about the same level that existed when the act was passed—has not been achieved. Through 1986, the Forest Service has offered an average of more than 450 million board feet of timber each year, but because of declining demand for timber and increasing competition from the Alaska Native corporations, only about 53 percent of this volume has been sold. These factors, together with increased efficiency in the industry, have reduced employment associated with the Tongass timber by more than half, from about 2,700 timber jobs in 1980 to about 1,420 jobs in 1986.

Section 705(a) was based on the Forest Service's projection in the land management plan that demand for Tongass timber would run from 400 to 450 million board feet per year and that employment levels could be maintained by providing this volume of timber to industry. Employment, however, cannot be maintained merely by ensuring that a timber supply is available. Employment is influenced by the amounts of timber sold and harvested, and in a depressed market, these amounts depend as much on market demand as on supply. For this reason, we do not believe that Section 705(a)'s provisions for sustaining employment by ensuring the availability of timber are likely to succeed in depressed market conditions.

Neither the land management plan nor Section 705(a) provided the Forest Service with flexibility for supplying timber under varying market conditions. The lack of flexibility put the Forest Service in the position of preparing and offering timber it could not sell. This situation created controversy over the Forest Service's responsibilities for supplying timber to industry. The timber industry has maintained that the Forest Service has not met its ANILCA obligations because much of the timber supplied has not been profitable under existing market conditions. Forest Service officials, by contrast, have maintained that they need only supply timber that would be profitable under market conditions present when ANILCA was passed. We believe that the Forest Service is not required under ANILCA or any other legislation to supply timber that will guarantee a profit regardless of market conditions.

The lack of flexibility for supplying timber at reduced demand levels has also resulted in the Forest Service's spending about $131 million for timber sale preparation and added investments to provide timber not needed to meet demand. Forest Service officials agreed that, in retrospect, the demand for Tongass timber could have been met without any added investments.

The Forest Service has taken steps to make its timber sales program more efficient, as well as other measures, such as timber price reductions, to help industry deal with the market downturn. Nonetheless, if the controversies are to be more fully resolved, the Forest Service's responsibility for supplying timber to the Tongass timber industry needs to be more clearly defined, and the timber supply provision of Section 705(a) made more flexible.

Projected Employment Levels Have Not Been Achieved

In enacting Section 705(a) of ANILCA, the Congress intended that the Tongass timber industry not lose employment when land was converted from available timber land to wilderness. Despite Forest Service expenditures of about $257 million from the Tongass Timber Supply Fund, the employment levels projected by the land management plan have not been attained. According to the plan, an annual supply of 450 million board feet of timber from the Tongass was expected to support about 2,700 jobs. The Forest Service estimates, however, that timber industry jobs generated by timber harvested from the Tongass declined to about 1,420 jobs in 1986. Table 3.1 shows the year-by-year figures.

Table 3.1: Estimated Direct Employment Associated With the Tongass National Forest Timber Harvest, 1980-86

	Tongass Timber Industry Employment						
	1980	1981	1982	1983	1984	1985	1986
Logging	1,060	740	680	500	510	450	594
Sawmill	740	570	530	400	350	400	336
Pulp mill	900	860	670	460	400	430	490
Total	**2,700**	**2,170**	**1,880**	**1,360**	**1,260**	**1,280**	**1,420**

According to Forest Service reports, the employment decline has primarily resulted from decreased harvest levels on the Tongass that have occurred for the following reasons:

- Declining demand for timber. Housing starts in Japan, the single most important factor affecting the Tongass timber market, have decreased in recent years, thereby reducing the demand for Tongass timber. Demand for pulp has also declined because of increased competition from such petrochemical products as polyester, which are technically superior and more economical. According to the Forest Service, the decline in demand for Tongass timber and pulp is projected to be long-term. However, in fiscal year 1987 and the first quarter of 1988, the demand for Tongass timber products has increased over the 1986 levels.

- Increasing timber production by Alaska Native corporations. As chapter 1 pointed out, timber harvests by Alaska Native corporations have increased from 70.3 million board feet in 1980 to 298.7 million board feet in 1986. Alaska Native corporation's round log exports compete directly with the Tongass timber industry for essentially the same market—Japan—and the Japanese prefer round logs. This preference serves to displace exports of Tongass timber. In 1986, the state of Alaska projected that the log exports of some Native corporations could drop by 40 percent over the next several years.

Greater productivity in the timber industry has also reduced industry employment. Industry officials told us that decreasing pulp markets and prices have forced cost and labor reductions. They said some supervisory and support jobs had been eliminated in an attempt to reduce operating costs. In 1980, for example, an estimated 6 jobs were required to harvest and process 1 million board feet of timber. This number had decreased to 4.2 jobs by 1986.

Section 705(a) was based on the Forest Service's projection in the land management plan that demand for Tongass timber would run from 400 to 450 million board feet per year and that employment levels could be maintained by providing this volume of timber to industry. Neither Section 705(a) nor the plan took into account the possibility that this level of demand might not materialize and that the added investment strategy would not work to maintain employment at significantly lower levels of demand.

Timber industry employment levels largely depend on the volume of timber harvested. Under the depressed market conditions between 1981 and 1986, the amounts of timber sold and eventually harvested primarily depended on the level of demand for timber, which, given the Forest Service's pricing practices, regulations, and other costs, was less than the supply that the Forest Service made available.

As we pointed out earlier, Japan has been the primary market for Tongass timber products. However, according to Forest Service reports, the Tongass industry has served only a small portion of that demand because high harvesting and transportation costs make southeast Alaska timber more expensive than other timber available to Japan. In addition, the Japanese preference for round logs makes Tongass timber less desirable. Japan, therefore, has tended to use southeast Alaska only as a secondary source of supply. Under these circumstances, the Forest

Service has little influence, if any, on the quantity of Tongass timber demanded, particularly in periods of depressed markets.

Merely making timber available to industry, regardless of demand or net cost to the purchaser, cannot ensure that this timber will be sold or harvested. Unless the planned volume of timber is harvested, there is no assurance that the level of timber industry jobs projected to be provided by this timber volume will be achieved.

Section 705(a) Timber Supply Provision Is Inflexible

The timber supply provision of Section 705(a) specifies that the Secretary of Agriculture is to supply Tongass timber to the dependent industry at the rate of 4.5 billion board feet per decade. This provision was based on the land management plan, which projected that the demand for Tongass timber would increase in the long run. However, neither the timber supply provision nor the plan provides the Forest Service with the flexibility to supply timber at lower demand levels. Believing it was compelled by the law and plan to offer timber at a 4.5 billion board feet per decade (450 million board feet per year) rate regardless of demand, the Forest Service spent millions of dollars to prepare and offer much more timber than it could sell.

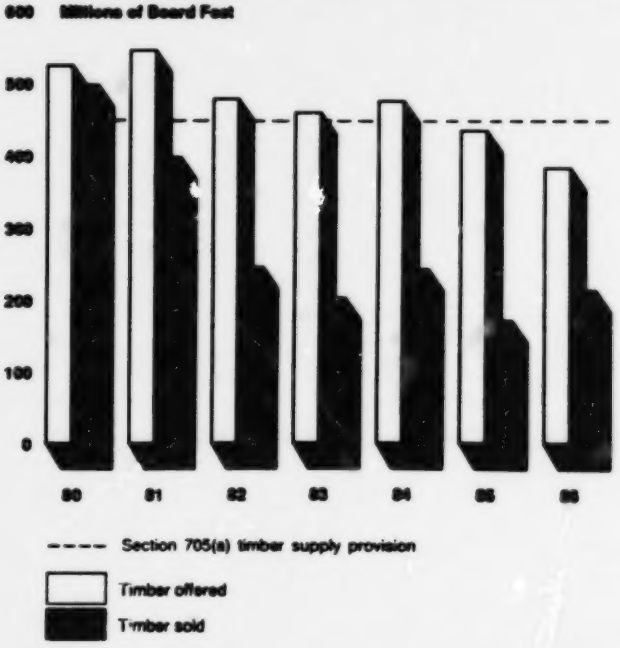
The volume of timber sold has fallen far below 450 million board feet per year, as figure 3.1 shows. From 1980 through 1986, the Forest Service has offered industry about 2.8 billion board feet of timber. However, only about 1.5 billion board feet, or 53 percent of the total volume offered, was sold.

The large disparity between the volume offered and sold resulted from the Forest Service's efforts to comply with the timber supply provision when market conditions were depressed. Because of the poor market, most of the timber the Forest Service offered was appraised as "deficit"—that is, as not bringing enough money after harvesting and processing to provide at least 75 percent of a normal profit margin for purchasers of average efficiency. Therefore, the industry was unwilling in many cases to buy timber offered by the Forest Service.

The Forest Service's Timber Supply Responsibilities

The disparity between timber supply and demand has resulted in a controversy between the Forest Service and industry over the Forest Service's responsibilities for supplying timber. The industry has contended that, to the extent deficit timber is offered, the Forest Service is not complying with the intent of ANILCA because the goal of 450 million

Figure 3.1: Timber Offered and Sold From the Tongass National Forest, Fiscal Years 1980-86



board feet per year is not being met with timber that is economically viable. Industry officials contend that the Forest Service was to use Section 705(a) funds to maintain the supply with fully profitable timber. If the timber is deficit, they say, the Forest Service has failed to meet its obligations under the statute.

The Forest Service disagrees. It contends that it is only required to offer timber that will give industry the same opportunity for economic viability it had before ANILCA and that it is not responsible for guaranteeing the industry's profitability under all market conditions. The Forest Service position is that it need not use the Tongass Timber Supply Fund to such an extent that all timber sales are non-deficit. Forest Service officials have said that the value of Tongass timber has dropped so low since 1980 that there have been times when timber operators would have still lost money on timber, even if the Forest Service logged the timber and delivered it to the pulp mills. The Chief of the Forest Service said that given the reduced demand since 1981, no amount of ANILCA investments could have maintained industry employment at historical levels.

BEST COPY AVAILABLE

We reviewed the legislative history of Section 705(a) and are not persuaded that it requires the result urged by the industry. The statute clearly was intended to protect the industry from the effects of ANILCA's withdrawal of timber land from the harvest base. The legislative history, however, does not show that Section 705(a) was intended to protect the industry from a decline in the demand for timber or otherwise guarantee employment. To conclude that the Forest Service must supply only timber that is economically viable would, in effect, make the Forest Service a guarantor that the industry will not bear the risk of timber market fluctuations.

Added Investments Were Not Needed

According to the land management plan, the Forest Service needed an added investment strategy that would supply sufficient timber to overcome the effects of ANILCA's wilderness designations. Under the plan (as amended in 1985-86), an annual supply of 338 million board feet of timber could be provided by the Forest Service's "normal" investment program—that is, the program dealing with timber that was profitable at the time the strategy was developed and that could be sold through the Forest Service's normal timber sale preparation activities. The remaining 112 million board feet would have to be provided by added investments in pre-roading, pre-commercial thinning, and advanced logging techniques discussed in chapter 1.

In retrospect, the Forest Service has not needed the added investment strategy to meet the reduced level of demand for Tongass timber. From 1981 through 1986, Tongass timber sales have averaged 245 million board feet annually. As table 3.2 shows, the Forest Service sold timber through both its added investment and normal investment programs. However, from 1982 through 1986 the Forest Service could have met total demand solely through its normal investment program because demand during these years did not exceed 338 million board feet per year.

Table 3.2: Timber Sold Through Added and Normal Investment Strategies, Tongass National Forest, Fiscal Years 1981-86

(Millions of board feet)

	1981	1982	1983	1984	1985	1986	Total
Added investments	57 (14.4%)	58 (23.7%)	64 (31.7%)	68 (28.1%)	108 (62.8%)	171 (80.3%)	526 (35.8%)
Normal investments	340 (85.6%)	187 (76.3%)	138 (68.3%)	174 (71.9%)	64 (37.2%)	42 (19.7%)	945 (64.2%)
Total	**397**	**245**	**202**	**242**	**172**	**213**	**1471**

According to the land management plan, the ANILCA wilderness designations have little or no impact on the ability of the Forest Service to supply timber to industry at demand levels below 338 million board feet per year. At this level of demand and below, the Forest Service can supply sufficient timber to meet demand through its normal investment program. The Forest Service does not need to make added investments to overcome the impact of wilderness designations until demand reaches or exceeds the level of 338 million board feet per year. At these demand levels, the Forest Service needs to implement its added investment strategy so that sufficient timber is available to meet demand.

From fiscal years 1981 through 1986, the Forest Service spent about $257 million of Tongass funds in its attempts to supply timber at the rate of 450 million board feet per year. (During this period the Forest Service offered an average of 462 million board feet per year to the industry.) Of this amount, the Forest Service spent about $131 million of the fund to supply timber that was not needed to meet current demand. This added investment included the costs of timber sale preparation, pre-roading, pre-commercial thinning, and advanced logging technology. Forest Service officials pointed out that forest management is a long-term proposition and that the added investment should not be just tied to short-term market changes.

Although the $131 million in added investment was not needed at current demand levels, we recognize that if future demand rises to the Forest Service's planned level of 4.5 billion per decade, then the added investments made in 1981 through 1986 could help meet the future timber demand. Had the Forest Service geared its timber sales program to provide only the amount of timber needed to meet demand, we estimate that the Forest Service's timber sales program would have cost about $126 million in Tongass timber funds during this period. Forest Service officials in the Alaska Region agreed with our estimate.

The Alaska Region timber management and planning officials acknowledged that the added investments have not been totally necessary to meet the levels of demand experienced since 1980. Because the recent demand for Tongass timber was below the levels that could be made available through normal investment, they said the added investments in the short term were not contributing toward maintaining the Tongass timber industry or its employment. Only when demand exceeds the volume that can be made available through the normal investment program would the added investment strategy begin working to support industry and employment levels.

Forest Service Actions Taken in Response to Reduced Demand

In response to the lower demand for Tongass timber, the Forest Service has taken actions to increase the efficiency of its timber sales program and the effectiveness of its added investment strategy. It has also taken several measures to reduce industry's harvesting and processing costs and has granted substantial reductions on the price of Tongass timber.

In 1985, the Forest Service revised its timber sale preparation policies. Instead of fully preparing timber sales at the rate of 450 million board feet per year, it began preparing timber sales only at the levels needed to replace previous volumes sold, so that a total of 450 million board feet would be available for sale. Although the Forest Service offered about 383 million board feet of timber for sale in 1986, the Region 10 Director of Timber Management said that the layout of timber sales, including roading, was currently at about the 200 million board foot level. He estimated that through this change, the region had been able to reduce its staffing by 50 and its timber sale preparation costs by $3.5 million. In our view, the Forest Service's revised timber supply policy is more reasonable given the reduced demand for Tongass timber.

In 1986, the Forest Service changed the timing of its added investment pre-roading activities. Previously, it had been pre-roading in advance of timber sales. Forest Service officials said that this practice sometimes resulted in roads being built in timber stands that would not be sold or harvested for a number of years. In 1986, the Forest Service adopted a policy of not starting road construction until after the timber sale has been awarded. The Forest Service also implemented a policy for purchasers with new timber sales contracts under which the purchasers would receive a subsidy (augmentation funds) for building roads. Forest Service officials believe these changes should benefit industry because now the pre-roading added investment will be made to access timber that will be harvested in the immediate future.

The Forest Service has also taken steps to reduce the purchasers' harvesting and processing costs. It has

- eased road construction standards to reduce construction costs;
- enlarged the allowed size of areas to be clear-cut to increase the volume of timber harvested per mile of road built;
- allowed accelerated re-entry into previously roaded areas to reduce the amount of road construction necessary; and
- temporarily allowed the manufacture of larger cants and temporarily relaxed standards so that logs with lower volumes of usable timber do not have to be removed from the sale area.

In 1981 and 1982, the Forest Service granted the two long-term contract companies "emergency rate redeterminations," or timber price reductions, in accordance with contractual provisions. For example, in 1983, the Forest Service reduced its price for Sitka spruce sawlogs from $215.98 to $2.26 per 1,000 board feet for one company and from $114.96 to $2.87 for the other. The Forest Service, under provisions of the Federal Timber Contract Payment Modification Act of 1984, also reduced its price for timber sold to 140 short-term contractors, retroactive to timber harvested since January 1, 1981.

Conclusions

The unanticipated decline in the market for Tongass timber products, compounded by the increased harvest of timber by Alaska Native corporations, has worked against the Forest Service's efforts to maintain timber industry employment. These efforts have focused primarily on providing the same volume of timber that was harvested under much more favorable market conditions. However, the volume of timber harvested—and the resulting employment—depends primarily on the market's demand for timber, not on its availability. Maintaining employment by ensuring supply, as Section 705(a) and the Forest Service's 1979 Tongass Land Management Plan attempt to do, will not be successful under all market conditions.

As a result of the inflexible timber supply provision of Section 705(a) and the underlying Tongass Land Management Plan for supplying timber, the Forest Service has incurred substantial expenses to prepare and offer timber it could not sell under depressed market conditions and made added investments in timber not needed to meet demand. This situation has led to the industry's misconception that the Forest Service is responsible for supplying profitable timber under all market conditions.

The Forest Service has made changes that lessen some problems with its approach. It has also taken significant measures to help the Tongass timber industry cope with depressed market conditions. However, we think clarifications and fundamental changes are necessary. The almost immediate market decline after ANILCA designated part of the Tongass as wilderness seems to have clouded the perceptions of many as to what the federal role should be in supplying timber to the industry. Dealing with these matters requires attention from both the Congress and the Forest Service.

Recommendation to the Congress

To provide the Forest Service with more flexibility for supplying timber under varying market conditions, the Congress should revise the 4.5 billion board-feet-per-decade timber supply provision of Section 705(a) of ANILCA. In making this revision, the timber supply provision should be revised so that the amount supplied would be based on the anticipated demand for timber and on the data currently being formulated by the Forest Service as part of its land management planning process rather than on a rigid per-decade requirement.

Agency Comments

In commenting on a draft of this report, the Forest Service said that our recommendation has merit and that final legislative action needs to take into account the improved information base and resource demands that the revised Tongass land management plan is identifying.

Timber Sale Revenues and Costs at the Tongass National Forest

As agreed with the requesters' offices, we compared the revenues and costs of the Tongass timber sales program for the latest year for which data were available. In fiscal year 1986, the Forest Service's timber sales program at the Tongass Forest generated revenues totaling about $3.3 million. To produce those revenues, the Forest Service incurred costs totaling about $25.5 million. Thus, the Tongass timber sales program lost about $22.1 million.

Tongass Timber Sale Revenues and Costs for 1986

Under federal law, timber sold in national forests must be sold at not less than its appraised value. The Forest Service computes the appraised value by estimating the market price for finished lumber at the mill, subtracting the purchaser's estimated logging and milling costs, and factoring in the purchaser's risk and profit. This appraisal method helps assure that a purchaser of average efficiency will make a profit from the timber purchased. The Forest Service's costs to grow and sell timber are not considered in making appraisals. The Forest Service does not know whether the prices it charges for timber are sufficient to cover its costs. However, when the Forest Service's new cost accounting system is installed nationwide, it will have much better data on which to make timber sale decisions.

In a 1984 report on the costs of timber sales, we recommended that the Forest Service develop a system to determine the costs of selling timber and to compare these costs with the estimated value to be received from the sale.[1] Subsequently, at the request of the Chairman, Subcommittee on Interior and Related Agencies, House Committee on Appropriations, we worked with the Forest Service Timber Sale Program Accounting Task Force to design a cost accounting system that the Forest Service could use to track its timber sales program costs and compare them with the related revenues. In 1987, we issued a report describing the basic design of this new timber sale cost accounting system.[2] This system design has been tested at several forests and found to be workable.

We used this new cost accounting system's concepts to calculate the Forest Service's timber sales revenues and costs for the Tongass National Forest for fiscal year 1986, the most recent year for which revenue and cost data were available. Forest Service staff worked with us and used

[1]Congress Needs Better Information on Forest Service's Below-Cost Timber Sales (GAO/RCED-84-96, June 28, 1984).

[2]Timber Program: A Cost Accounting System Design for Timber Sales in National Forests (GAO/AFMD-87-33, Apr. 21, 19

this effort to begin the national implementation of the new cost accounting system. Table 4.1 shows the results of our analysis. We discuss our methodology in appendix VI.

Table 4.1: Statement of Timber Sale Revenues and Costs, Tongass National Forest, Fiscal Year 1986

Revenues	
Timber sales	$768,000
Purchaser road credits	2,506,000
Associated charges	62,000
Interest and penalties	3,000
Total	**3,339,000**
Costs	
Sale activity allowance[a]	9,740,000
Growth activity allowance[a]	1,654,000
Single-year costs[a]	10,073,000
Facilities depreciation	494,000
Washington office costs	1,446,000
Research	2,044,000
Total	**25,451,000**
Loss before payment to state	(22,112,000)
Payment to state	433,000
Net loss	($22,545,000)

[a]Includes regional office costs.

We were also requested by Senator Proxmire's office to provide a comparative analysis of costs and revenues using different methods of allocating forest road costs. This analysis is shown in appendix VII.

Revenues

In fiscal year 1986, the Tongass timber sale program generated approximately $3.3 million in revenues. The revenue sources listed in table 4.1 are defined as follows:

- Timber sales are the cash payments made or due the government for timber harvested during the year. As discussed below, purchasers may also use purchaser road credits to pay for timber. These credits, along with cash payments, represent the total amount the purchasers owe the government for the timber harvested.
- Purchaser road credits represent the timber sale revenue, which is the value of purchaser-built timber access roads. If a purchaser is contractually required to build roads as part of the sale, the amount the purchaser is obligated to pay in cash for the timber harvested is reduced by

the Forest Service's cost estimate to build the roads. On such sales, the Forest Service receives a combination of cash and roads as remuneration for the timber. In essence, the Forest Service exchanges one type of asset—timber, for another—roads.

- Associated charges are deposits collected from timber sale operators for some functions associated with timber sales, such as brush removal from harvest sites.
- Interest and penalties are charges assessed purchasers for such items as interest on late payments and fines for cutting reserved trees.

Costs

Under generally accepted accounting principles, accurate measurement of profits or losses require that revenues be properly matched to the costs incurred in generating those revenues. In chapter 2, we reported that in fiscal year 1986 the Forest Service spent about $47.9 million in Tongass Timber Supply Funds. During 1986, the Tongass timber sale program generated about $3.3 million in revenues. As a result, the government's outlays for this program exceeded its intake by about $44.6 million (net outlays). See appendix VIII for the net outlays for prior years.

However, in a timber sale program such as the Forest Service's, profit or loss cannot be determined simply by deducting the year's expenditures from the revenues earned that year. That is, that the costs to grow and sell a timber stand are generally incurred for many years before and for several years after the timber is sold and any revenue is generated. A more detailed explanation of the relationship of 1986 expenditures and costs of the timber sale program is provided in appendix IX.

The cost accounting concepts we used provide a mechanism for capturing the costs that are incurred over time (multi-year costs) so that they can be properly matched with the revenues that are generated by the sale of the timber. The accounting system "pools" these costs as they are incurred over time and uses a formula to match these costs to the associated revenues through an annual allowance based on the volume of timber harvested. The system uses two such allowances as well as several categories of single-year costs, defined as follows:

- Sale activity allowance includes multi-year costs that can be directly associated with actual timber sales. These costs include timber sale planning and preparation, and road planning and maintenance.
- Growth activity allowance includes multi-year costs that are incurred when timber is in its growth phase rather than in the timber sale phase.

Included are such costs as fertilization, pre-commercial thinning, pest control, and fire control, as well as the construction of forest roads.

- Single-year costs are those directly related to the revenue generated in the year they are incurred. These include administrative costs incurred during the harvest, such as overseeing the purchaser's removal of timber, and certain overhead items. The cost accounting system maintains these items separately for matching against the year's revenues.
- Depreciation for facilities represents the annual depreciation expense for all facilities built with the Tongass Timber Supply Fund. It includes depreciation on the administrative facilities discussed in chapter 2 as well as on the facilities listed in appendix IV. We depreciated these facilities over 30 years.
- Washington office costs include the 1986 allocation of the Tongass Timber Supply Fund for salaries and other expenses incurred on Tongass timber sale activities by headquarters personnel.
- Research costs include the 1986 allocation of the Tongass Timber Supply Fund to the Forest Service's research activities as described in chapter 2 and appendix V.

In addition, federal law requires the Forest Service to pay 25 percent of certain timber sale receipts to the states for distribution to the counties in which the sales are located. These funds are intended to compensate the counties for lost tax revenues and are specifically earmarked for public roads and schools.

Revenues and Costs at Administrative Areas

In table 4.1 we summarized revenue and cost information at the forest level. However, our design for the timber cost accounting system provides for the development of revenues and cost information by timber management areas below the forest level, when appropriate, and by category of sale. For example, table 4.2 shows the 1986 revenues and costs of the three administrative areas of the Tongass, the Alaska Regional office, the Washington office, and research costs.

Table 4.2: Statement of Timber Sale Revenues and Costs, Administrative Areas of the Tongass National Forest, Alaska Region, Fiscal Year 1986

(dollars in thousands)

Revenues	Ketchikan	Stikine	Chatham	Alaska Regional Office	Total
Timber sales	$411	$260	$97	$0	$768
Purchaser road credits	1,485	1,021	0	0	2,506
Associated charges	2	32	28	0	62
Interest and penalties	0	3	0	0	3
Total	**1,189**	**1,316**	**125**	**0**	**3,339**
Costs					
Sales activity allowance	2,818	2,109	2,772	2,041	9,740
Growth activity allowance	705	612	281	56	1,654
Single-year costs	2,383	1,486	1,741	4,463	10,073
Facilities depreciation	266	74	154	0	494
Washington office costs					1,446
Research					2,044
Total	**6,172**	**4,281**	**4,948**	**6,560**	**25,451**
Loss before payment to state	(4,274)	(2,965)	(4,823)	(6,560)	(22,112)
Payment to state	105	310	18	0	433
Net loss	($4,379)	($3,275)	($4,841)	($6,560)	($22,545)

Information developed at greater levels of detail will allow the Forest Service, the Congress, and other interested persons to assess varying degrees of profitability among timber sales within different sub-units of a forest. This information at the sub-unit level, such as the administrative areas of the Tongass, can also be developed by the type of timber sale. For example, the Forest Service has decided to develop revenue and cost information on the administrative areas of the Tongass according to the two 50-year timber sale contracts, the regular short-term timber sales, and personal-use sales for such items as firewood, cones, and Christmas trees.

BLANK PAGE

Comments From the Department of Agriculture

United States Department of Agriculture | Forest Service | Washington Office | 12th & Independence SW P.O. Box 96090 Washington, DC 20090-6090

Caring for the Land and Serving People

Reply To: 1420

Date: DEC 23 1988

Mr. J. Dexter Peach
Assistant Comptroller General
Resources, Community, and Economic
Development Division
U. S. General Accounting Office
Washington, D.C. 20548

Dear Mr. Peach:

We appreciate the opportunity to comment on the draft General Accounting Office (GAO) report entitled TONGASS NATIONAL FOREST: Timber Provisions of the Alaska Lands Act Needs Clarification. We believe the GAO has done a thorough and professional job of sorting out many of the complex issues related to the management of the timber program on the Tongass.

Although the report recommendation is not directed to the Forest Service, we are providing a comment related to the recommendation. We believe the recommendation has merit, but we believe that any final legislative action needs to take into account the improved information base and resource demands that the revised plan is identifying. A revision of the Land Management Plan for the Tongass National Forest is currently well underway and we expect the draft to be released for public comment by the end of calendar year 1989.

Sincerely,

[redacted]
f.r. Chief, Forest Service

FS-6200-28a (5/84)

BEST COPY AVAILABLE

Tongass National Forest Appropriations Summary, Fiscal Years 1981-86

(Dollars in thousands)

Appropriation	1981	1982	1983	1984	1985	1986	Total
Fire management	$249	$211	$196	$259	$238	$311	$1,464
Protection and management	14,506	8,883	9,000	9,137	9,607	9,533	60,666
Fighting forest fires	50	9	127	8	206	352	752
Road and trail maintenance	1,320	983	1,008	1,003	1,465	1,209	6,988
Cooperative law enforcement	73	15	23	30	39	35	215
Reforestation and timber stand improvement	866	(26)	32	244	817	(2)	1,931
State and private forestry	458	170	•	•	•	•	628
General administration	•	2,870	2,938	3,375	3,275	1,884	14,372
Cooperative work—KV	873	942	211	1,012	1,071	1,213	5,322
Cooperative work—other	245	244	219	330	192	134	1,364
Youth Conservation Corps	9	•	•	•	•	•	9
Young Adult Conservation Corps	1,890	494	•	•	•	•	2,384
Timber salvage sales	135	325	148	318	165	26	1,117
Brush disposal	59	•	13	26	40	57	195
Site preparation	•	•	769	•	•	•	769
Roads trails & facilities	•	•	470	141	•	•	611
Recreation rehabilitation	•	•	147	537	24	•	708
Federal highways	•	•	•	27	27	5	59
Restoration of lands and improvements	•	1	6	•	•	5	12
Reforestation trust	•	•	517	30	23	•	570
Construction of recreational facilities	60	141	24	•	176	187	588
General purpose construction	253	(70)	400	921	382	820	2,706
Construction of roads and trails	5,504	(324)	3,120	3,189	3,725	2,386	17,600
Purchaser credit	20,145	34,493	79	•	•	•	54,717
Pollution abatement	1	•	•	•	•	•	1
Quarters maintenance	•	•	•	•	187	232	419
Total	**$46,886**	**$48,381**	**$18,477**	**$20,587**	**$21,659**	**$18,387**	**$176,187**

Note: Tongass Timber Supply Fund not included.

BEST COPY AVAILABLE

Tongass Timber Supply Fund Expenditures, Fiscal Years 1981-86

(Dollars in thousands)

Description	1981[a]	1982	1983	1984	1985	1986	Total
Timber sales preparation	$6,100	$7,776	$9,233	$9,349	$10,054	$8,101	$50,613
Timber sales administration	2,566	2,586	3,216	3,519	3,241	3,859	18,987
Timber support	1,356	1,899	2,516	2,911	2,639	3,030	14,351
Reforestation	359	762	1,136	933	543	195	3,928
Timber stand improvement	1,838	3,232	3,194	2,858	2,359	3,721	17,202
Facilities construction[b]	1,870	7,344	2,391	3,767	2,516	1,693	19,581
Road construction[c]	3,032	8,109	10,525	11,347	11,477	14,720	59,210
Engineering support[d]	5,894	12,786	11,175	11,696	11,575	10,600	63,726
Research	150	1,401	1,654	1,674	2,044	2,044	8,967
Total	**$23,165**	**$45,895**	**$45,040**	**$48,054**	**$46,448**	**$47,963**	**$256,565**

Source: U.S. Forest Service, Alaska Region.

[a]ANILCA legislation, which created the Tongass fund, was not enacted until 12/2/80; the Treasury did not set up the fund until the third quarter of fiscal year 1981. Reported Tongass expenditures were supplemented with the Forest Service's protection and management appropriation and are not reflected in these figures.

[b]Expenditures include Forest Service engineering support.

[c]Excludes purchaser credit.

[d]Reflects engineering support expenditures for both public works and purchaser credit constructed roads.

BEST COPY AVAILABLE

Facilities Constructed With Tongass Timber Supply Funds, Fiscal Years 1981-86

Description	Work performed	Cost
Ranger district facilities		
Thorne Bay	Site preparation, administrative and maintenance buildings, and housing	$5,712,853
Ketchikan	Barracks	445,441
Hoonah	Land appraisal and housing	1,439,960
Juneau	Paint and fuel storage facility Sprinkler system	73,374 72,444
Wrangell	Site preparation, utilities, and marine facility	677,018
Total		**8,421,090**
Floating field camps		
Ketchikan area (2 camps)		780,591
Chatham area (1 camp)		480,180
Total		**1,260,771**
Work centers		
Corner Bay	Bunkhouse with attached warehouse and separate garage	939,405
Portage Bay	Bunkhouse with attached warehouse and separate garage	711,632
Cascade Creek	Warehouse, removal and disposal of two existing buildings, relocation of over head utility lines, modification of existing fence, and gravel and rock fill work	605,160
Yakutat	Warehouse, storage building, addition to existing crewhouse, trailer pads, and installation of underground utilities	395,892
Rowan Bay	Maintenance facility and relocation of an existing Forest Service trailer	219,531
Total		**2,871,620**
Other facilities		
Ketchikan area	Radio equipment building equipment Shoal Cove dock construction	15,997 107,351
Petersburg	Single-family residence	92,342
Petersburg	Marine facility	294,966
Total		**510,656**

(continued)

BEST COPY AVAILABLE

Description	Work performed	Cost
Facility repairs		
Scow Bay	Warehouse reroofing	24,645
Petersburg	Residence reroofing	18,528
Wrangell	Duplex deck reconstruction	5,563
Forest-wide	Health and safety repairs	348,500
Total		**397,236**
Other costs		
Engineering support	Planning, survey, and design	2,991,276
Architect and engineer	Design and planning contracts	1,028,296
Regional office	Overhead	1,240,792
Other costs	Miscellaneous costs	859,263
Total		**6,119,627**
Total Tongass Fund Construction		**$19,581,000**

BEST COPY AVAILABLE

Research Projects Funded by the Tongass Timber Supply Fund, Fiscal Years 1981-86

Description	Cost
Effects of silvicultural systems on timber productivity	$2,093,000
Management practices for big game and other wildlife habitat	1,082,000
Management practices to minimize timber production effects on soil nutrients, slope stability, and stream hydrology	857,000
Management practices to minimize effects of forest management activities on salmonid habitat productivity	931,000
Management practices to minimize effects of diseases on forest productivity	286,000
Improved harvesting equipment and technology	258,000
Economic impacts of alternative forest resource management policies	320,000
International and domestic markets for Alaskan forest products	251,000
Phenotypic-Genotypic correlations for intensive forest management	42,000
Southeast Alaska multi-resource relationships and models	337,000
Subsistence and recreation relationships to timber management	462,000
Effects of alternative timber supply pclicies	77,000
Improved utilization processes and technology for products from southeast Alaska timber species	228,000
Washington Office assessment	128,000
General administration and overhead	1,615,000
Total	**$8,967,000**

BEST COPY AVAILABLE

Methodology Used to Compare Revenues and Costs for the Tongass Timber Sales Program

To determine the total revenues and costs for the Tongass for fiscal year 1986, we initially calculated the 1986 revenues and costs for each of the forest's three administrative areas. We then "combined" this information to obtain forest level costs and added the applicable regional, headquarters, and research costs funded by the Tongass Timber Supply Fund.

Revenues

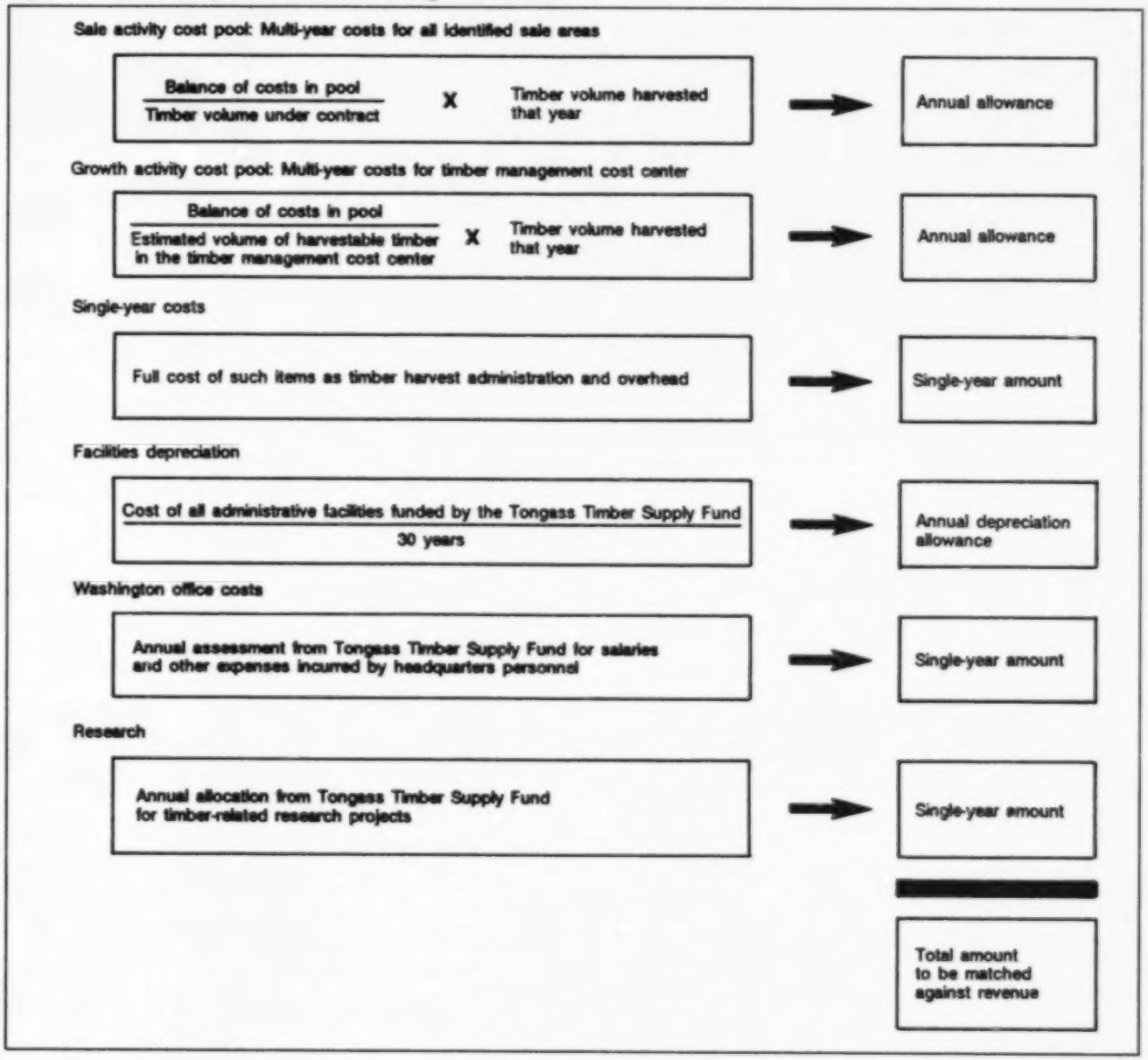
In fiscal year 1986, the three administrative areas of the Tongass earned timber program revenues from four sources: timber sales, purchaser road credits, associated charges, and interest and penalties.

- Timber sales include cash payments made to the government for timber harvested under the two long-term contracts and all short-term contracts during the fiscal year. Also included are cash receipts for personal use sales, which are sales of such items as firewood, Christmas trees, and cones.
- Purchaser road credits include credits earned by the purchasers for building roads needed to harvest timber as specified in their contracts. These credits are applied against the amount the purchasers owe the Forest Service for timber purchased and reduce the total amount of cash the purchasers have to pay for the timber. The value of the credits is equivalent to the cost of the road as determined by Forest Service engineering estimates and as stipulated in the timber sales contracts.
- Associated charges include payments made to the government as required or allowed by timber sale contracts for such activities as brush disposal, road maintenance, and erosion control. Brush disposal deposits are used to pile and burn slash remaining after a timber harvest. Road maintenance deposits are used to maintain and/or repair the roads used by timber purchasers during a timber harvest. Erosion control deposits are used for grass seeding and other measures needed for controlling soil erosion.
- Interest and penalties include such items as interest on late payments, fines for cutting reserved trees, and any other interest, penalties, or fines.

Costs

We separated costs into six categories: sales activity allowance, growth activity allowance, single-year costs, facilities depreciation, Washington office costs, and research. Figure VI.1 illustrates our methodology for computing costs.

Figure VI.1: Determining Costs to Be Matched Against Revenues


Sale activity cost pool: Multi-year costs for all identified sale areas
Balance of costs in pool / Timber volume under contract
X
Timber volume harvested that year
Annual allowance
Growth activity cost pool: Multi-year costs for timber management cost center
Balance of costs in pool / Estimated volume of harvestable timber in the timber management cost center
X
Timber volume harvested that year
Annual allowance
Single-year costs
Full cost of such items as timber harvest administration and overhead
Single-year amount
Facilities depreciation
Cost of all administrative facilities funded by the Tongass Timber Supply Fund / 30 years
Annual depreciation allowance
Washington office costs
Annual assessment from Tongass Timber Supply Fund for salaries and other expenses incurred by headquarters personnel
Single-year amount
Research
Annual allocation from Tongass Timber Supply Fund for timber-related research projects
Single-year amount
Total amount to be matched against revenue

BEST COPY AVAILABLE

Sales Activity Allowance

This cost category includes multi-year costs incurred after specific timber sale boundaries have been set. This category contains the costs of such activities as timber sale planning and preparation and road planning and maintenance.

We matched the sales activity costs with 1986 revenues by first creating a "cost pool" to capture the timber sale costs incurred from prior fiscal years and then computed an allowance to be charged against annual revenues. We determined the 1986 allowance by dividing the total pool costs by the volume of sales under contract and multiplying the result by the volume of timber harvested in 1986. Amounts not allocated in 1986 will be carried over for matching against revenues from timber harvested in succeeding years.

Growth Activity Allowance

To compute this allowance, we first pooled all multi-year costs incurred in growing timber in the respective administrative areas of the forest. These costs were for fertilization and treatment, pre-commercial thinning, pest control, and fire control. Also included in this pool are the costs of roads that were built for the timber harvest as well as for other purposes, such as access to fishing streams.

To compute the growth activity allowance for 1986, we divided the total costs in the pool by the total estimated volume of harvestable timber in each of the respective administrative areas. We multiplied the result by the amount harvested in 1986. The amounts not allocated to 1986 revenues will be carried forward to form the beginning balance of next year's pool.

Single-Year Costs

These include the costs incurred in fiscal year 1986 that are directly related to the revenues generated in 1986. Included are the costs of administering active timber sales, such as overseeing the purchaser's removal of timber. Certain overhead costs attributed to the timber program but not to a specific sale are also included.

Facilities Depreciation

To compute this amount, we totaled all administrative facility costs financed with the Tongass Timber Supply Fund for each administrative area and depreciated them on a straight-line basis with no salvage value over a period of 30 years.

Imputed Interest and Inflation

The sale and growth activity costs were calculated by aggregating costs in prior years without adjusting for the imputed interest and inflation associated with these costs. Imputed interest represents the implicit cost of money (or investment) to the government. When the imputed interest costs and inflation adjustments are considered, the true sales and growth activity costs are even higher.

Regional, Headquarters, and Research Costs

According to Alaska Regional Office officials, some regional office costs are incurred in direct support of specific timber sales. We factored these costs into either the sales or growth activity allowances, as applicable. We treated the remaining regional office costs as single-year costs.

We also treated headquarters and research costs as single-year costs. We considered these costs to be primarily overhead-type expenditures because they are not readily identifiable with specific timber sales.

Payments to State

In the Tongass, the Forest Service's payments to the state from timber sales are calculated on timber sales receipts deposited to the National Forest Fund and the Knutson-Vandenberg Fund (for reforestation and timber sale area improvements) and on purchaser road credits used by timber purchasers during the year. The amount we used in our revenue and cost statement reflects the actual payment made by the Forest Service for fiscal year 1986.

Comparative Statement of Costs and Revenues Using Different Accounting Methods for Allocating Forest Road Costs, Tongass National Forest, Fiscal Year 1986

(Dollars in thousands)

	GAO preferred	Alternative Method[a]		
Revenues	**method**	**20 Years**	**30 Years**	**40 Years**
Timber sales	$768	$768	$768	$768
Purchaser road credits	2,506	2,506	2,506	2,506
Associated charges	62	62	62	62
Interest and penalties	3	3	3	3
Total	**3,339**	**3,339**	**3,339**	**3,339**
Costs				
Sale activity allowance	9,740	9,740	9,740	9,740
Growth activity allowance	1,654	209	209	209
Single-year costs	10,073	10,073	10,073	10,073
Facilities depreciation	494	494	494	494
Road depreciation	•	13,041	8,694	6,521
Washington Office costs	1,446	1,446	1,446	1,446
Research	2,044	2,044	2,044	2,044
Total	**25,451**	**37,047**	**32,700**	**30,527**
Loss before payment to state	(22,112)	(33,708)	(29,361)	(27,188)
Payment to state	433	433	433	433
Net loss	($22,545)	($34,141)	($29,794)	($27,621)

[a]Under the alternative method, road costs were removed from the growth activity allowance and depreciated separately on a straight-line basis over periods of 20, 30, and 40 years for comparative purposes.

Net Outlays of the Tongass Timber Sales Program, Fiscal Years 1981-85

(Dollars in thousands)

Year	Revenues	Outlays	Net Outlays
1981	$14,850	$23,165	$8,315
1982	21,509	45,895	24,386
1983	5,589	45,040	39,451
1984	3,840	48,054	44,214
1985	100	46,448	46,348

Source:USDA Forest Service Timber Supply and Demand Report, Tongass National Forest, Fiscal Year 1986.

Relationship of the Tongass Timber Supply Fund's Expenditures and the Timber Sales Program's Costs, Fiscal Year 1986

In chapter 2 (table 2.1) and appendix III, we reported that the Forest Service spent $47.963 million in Tongass Timber Supply Funds (TTSF) in fiscal year 1986. In chapter 4, table 4.1 and table 4.2, we reported that the Forest Service incurred costs of $25.451 million in its Tongass Timber Sales Program during fiscal year 1986. Senator Proxmire's office requested us to fully explain the relationship of these two concepts and account for the $22.512 million difference. Conceptually, the TTSF expenditures are on a cash basis (outlays), whereas the costs of the timber sales program is on an accrual basis. The cost accounting concepts we used provide a mechanism for capturing the costs on an accrual basis that are incurred over time (multi-year costs) so that they can be properly matched with revenues that are generated on the sale of timber.

As shown in table IX.1, the primary reason for the difference is that the Forest Service spent about $22 million more on activities related to the growth of future timber stands than was recognized as costs in 1986. The other major difference is that the Forest Service spent $1.199 million more on facilities construction than was recognized as depreciation costs for 1986. We explain these and the other differences in more detail below.

Table IX.1: Difference Between TTSF Expenditures and Timber Sales Program Costs, Tongass National Forest, Fiscal Year 1986

(Dollars in thousands)

	TTSF expenditures	Timber program costs	Difference
Sales activity allowance	$9,660	$9,740	$(80)
Growth activity allowance	23,660	1,654	22,006
Single-year costs	9,460	10,073	(613)
Facilities	1,693	494	1,199
Washington Office	1,446	1,446	0
Research	2,044	2,044	0
Total	**$47,963**	**$25,451**	**$22,512**

Sales Activity Allowance

During 1986, the Forest Service spent $9.66 million of the Tongass Timber Supply Fund on activities associated with the sales activity pool. These activities include timber sale preparation, timber support, and road planning and maintenance. As table IX.2 shows, the $9.66 million along with $528,000 from other appropriations was added to the existing pool balance from which the 1986 allocation of $9.74 million was computed on the basis of the amount of timber harvested that year. (See app. VI and fig. VI.1 for more details on the cost pools.)

Table IX.2: Calculation of the Sales Activity Allowance, Tongass National Forest, Fiscal Year 1986

(Dollars in millions)	
Beginning pool balance (pre-1986 costs)	$27.380
Costs added in 1986:	
from TTSF appropriation	9.660
from other appropriations	0.528
Total costs to be depleted	37.568
Less sales activity allowance for 1986[a]	−9.740
Ending pool balance	$27.828

[a]Allowance calculated by multiplying total costs to be depleted by the 1986 harvest volume factor of .259269.

In essence, the costs in the sales activity pool can be considered as flowing through the pool. The timber sale preparation and other costs added to the pool in 1 year generally contribute to harvests in future years because of the lead-times associated with these activities. Therefore, the Forest Service's expenditures on these activities ($9.660 million) in 1986 will be recognized as costs in future years when the timber from the related sales is harvested. Conversely, the sales activity allowance for 1986 ($9.740 million) can be viewed as being made up of costs added to the pool in previous years.

The negative difference of $80,000 between the $9.660 million in costs added to the pool and the $9.740 million pool allowance, merely indicates that less was added to the pool than was depleted.

Growth Activity Allowance

During 1986 the Forest Service spent about $23.66 million of the Tongass Timber Supply Fund appropriation on activities associated with the growth activity pool. These activities include reforestation, timber stand improvement, and road construction. As with the sales activity pool, the $23.66 million along with $2.87 million from other appropriations was added to the existing pool balance from which the 1986 allocation of $1.656 million was computed based on the amount of timber harvested that year.

Table IX.3: Calculation of the Growth Activity Allowance, Tongass National Forest, Fiscal Year 1986

(Dollars in millions)	
Beginning pool balance (pre-1986 costs)	$260.650
Costs added in 1986:	
from TTSF appropriation	23.680
from other appropriations	2.868
Total costs to be depleted	287.178
Less growth activity allowance for 1986[a]	−1.656
Ending pool balance	$285.522

[a]Allowance calculated by multiplying total costs to be depleted by the 1986 harvest volume factor of .005765.

As with the sales activity pool, the costs in the growth activity pool can also be considered as flowing through the pool. The 1986 expenditures made on timber growing activities are not associated with the current year's timber harvest but rather with timber harvested in future years. Therefore, the TTSF expenditures made in 1986 on these activities will be recognized as costs in the growth activity allowance at some time in the future when the related timber is harvested. Conversely, the costs of the 1986 growth activity allowance represent expenditures made in prior years for the benefit of the timber harvested in 1986.

The difference of $22.006 million between the amount added to the pool in 1986 and the 1986 allowance merely indicates that the Forest Service spent more on growth-related timber activities than the accounting system recognized as growth activity costs associated with the current year's harvest.

Single-Year Costs

During 1986 the Forest Service spent about $9.46 million of the Tongass Timber Supply Fund appropriation on the activities treated as single-year costs in the cost accounting system. As we explain in appendix VI, these activities are directly associated with the 1986 timber harvest and include timber sale administration and overhead costs.

The negative difference of $613,000 occurred because the Forest Service expended funds on these activities from other Forest Service appropriations such as Fire Management, Road and Trail Management, and Protection Management, as well as the Tongass Timber Supply Fund.

Facilities Costs

During 1986 the Forest Service spent $1.693 million of the Tongass Timber Supply Fund on the building of administrative facilities. In the cost

accounting system, some of the 1986 expenditures, generally those associated with facilities that were put into operation during the year, were added to the existing balance of the facilities assets accounts. The total amount is depreciated over 30 years.

The $1.199 million difference between the facilities expenditures made in 1986 and the 1986 depreciation amount indicates that the Forest Service added more to their facilities accounts than was depreciated out during the year.

Washington Office Costs

During 1986 the Forest Service spent $1.446 million of the Tongass Timber Supply Fund for its Washington office activities. As we explain in appendix VI, these are considered overhead expenses that are recognized as costs in the year they occur.

Research

During 1986 the Forest Service spent $2.044 million of the Tongass Timber Supply Fund on research activities, which are recognized as costs in the year the funds are expended. See appendix V for a listing of these research projects.

Appendix X

Major Contributors to This Report

Resources, Community, and Economic Development Division, Washington, D.C.	Brian P. Crowley, Senior Associate Director, (202) 275-5138 John W. Harman, Associate Director John P. Murphy, Assignment Manager Robert J. Mancuso, Technical Advisor Mehrzad Nadji, Economist Carol Herrnstadt Shulman, Writer-Editor Julian L. King, Information Processing Assistant Frances D. Williams, Secretary/Stenographer
Seattle Regional Office	Charles H. Shervey, Evaluator-in-Charge John W. Sisson, Evaluator Nancy Purvine, Evaluator Stan Stenerson, Reports Analyst Julie Rachiele, Technical Information Specialist
Accounting and Financial Management Division Washington, D.C.	Edward P. Darragh, Systems Accountant
Office of General Counsel	Barry R. Bedrick, Managing Attorney Richard Martinez, Attorney-Advisor

•U.S. G.P.O. 1988-201-749:80048

Requests for copies of GAO reports should be sent to:

U.S. General Accounting Office
Post Office Box 6015
Gaithersburg, Maryland 20877

Telephone 202-275-6241

The first five copies of each report are free. Additional copies are $2.00 each.

There is a 25% discount on orders for 100 or more copies mailed to a single address.

Orders must be prepaid by cash or by check or money order made out to the Superintendent of Documents.